Fig. 3 is a section of a right-hand hanging-style, and the containing frame, and is a very

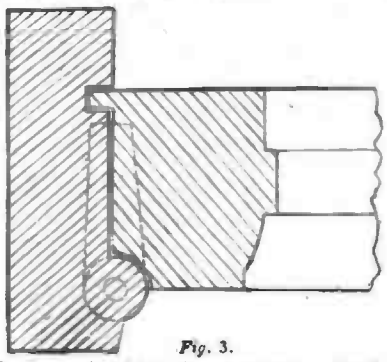

Fig. 3.

simple mode of hanging casements. By the above arrangement, the casements are rendered weather-tight in all their vertical joints, besides being effectually fastened, without presenting the projections of the Espagnolette bolt.

Fig. 4 is a section of a sill and casement

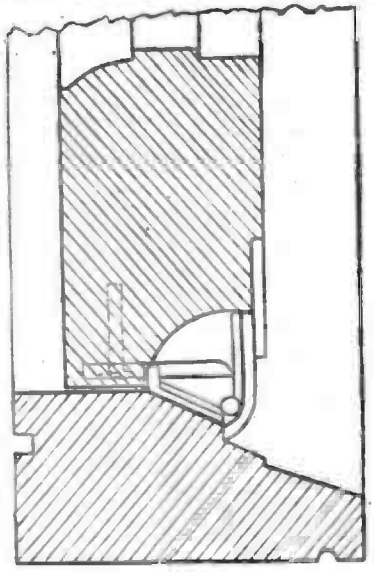

Fig. 4.

bottom-rail, to which is applied the patent weather-bar, the action of which is apparent. The casement is shewn as shut, the tongue which passes under and raises the hinged-flap keeps it close to the face-plate, which is screwed to the bottom-rail, while the casement is closed; but so soon as the casement commences opening, the flap drops gradually till the point of the tongue has passed from under it, when it is relieved and drops into its seat, where it is protected from being trodden up or raised by accident: thus three joints are formed impervious to weather.

Fig. 5 is another description of weather-bar,

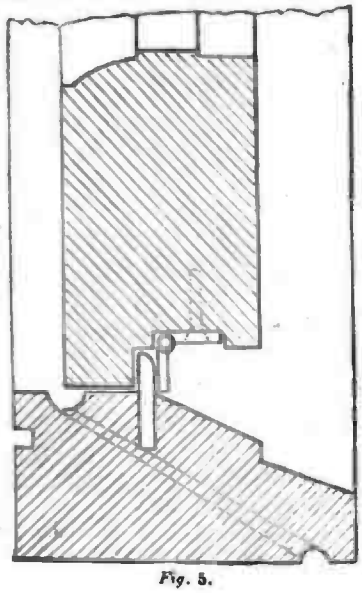

Fig. 5.

the peculiarity of which consists in the arrangement of the hinges of the flap, which is so hung that the greater the pressure of wind or water against it, the firmer will be the joint. Figs. 6 and 7 illustrate an important improvement in the construction of revolving

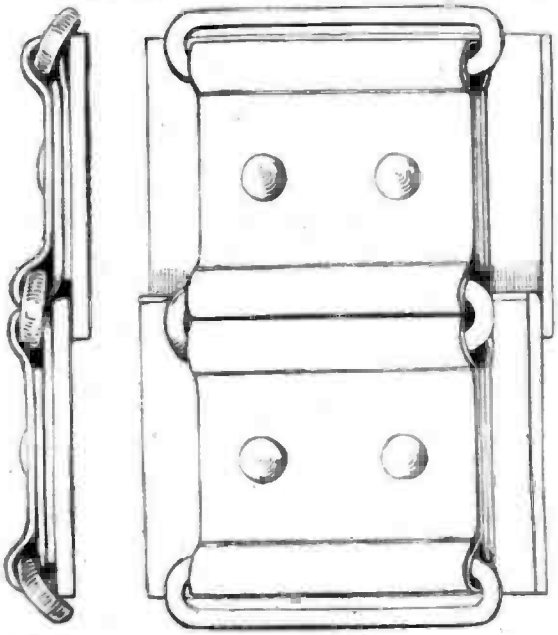

Fig. 7. *Fig.* 6.

iron shutters, consisting in the substitution of a chain of the form shewn by fig. 6, and of which fig. 7 is an edge-view, in place of the hinge usually applied to revolving shutters;

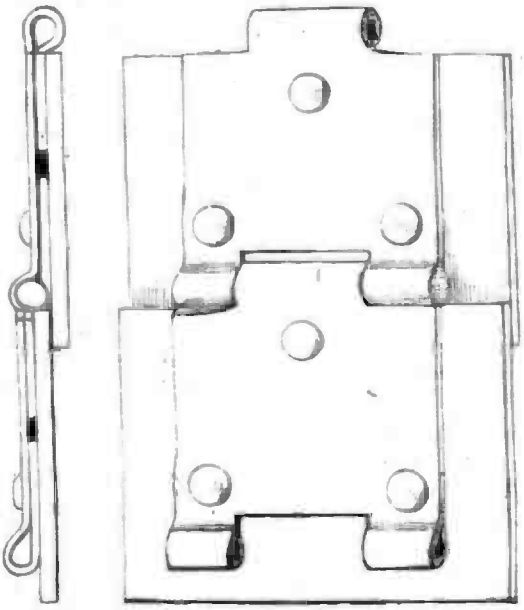

Fig. 9. *Fig.* 8.

such hinge being represented by figs. 8 and 9, by a comparison of which the efficient operation of the chain will be apparent.

The advantages sought by the use of chains to be gained without increase of cost, over hinges, are, *four times the strength, four times the working-surface, the requirement of less room, greater security, non-liability to derangement, and fourfold duration.* Those interested in the application of iron shutters, casement-fastenings, sill-bars, &c., would do well to inspect the numerous and interesting models of them at the patentee's works, and will then be able to judge how nearly these desiderata are accomplished.

GREENWICH HOSPITAL.—A considerable number of workmen are employed within the boundary-wall of Greenwich Hospital, laying down iron piping, for the purpose of more speedily extinguishing fire, should it at any time break out in that national edifice, without the aid of fire-engines. The principle is similar to that which has been for some time urged upon the government, and tried in the streets of the metropolis. The water is conveyed in pipes of nine-inches bore, laid from the capacious reservoir in the domain of her Royal Highness the Princess Sophia, immediately above the Observatory. Thence it passes along the declivity, supplies the Naval School, crosses the Woolwich-road, and enters the Hospital at the western-gate. The piping is to be laid throughout the whole of the exterior, and it is calculated upon hydrostatic principles that the pressure of water will be sufficient without the aid of machinery, to force its way through lengths of leathern hose sufficient to reach the highest part of the building. It has been proved by recent experiments made in town, that, though water be conveyed through 5,300 yards of iron piping, consisting of 4,220 yards of 20-inch main, 550 yards of 15-inch main, and 500 yards of 9-inch main, the force was sufficient to drive it through two lengths of 40-feet hose to a height of 60 feet, giving a delivery of 100 gallons per minute. At Greenwich Hospital it is intended to erect stand-cocks so as to command every portion of the extensive pile, and from the diameter of the piping and the height of the fall, there can be no question but that the plan, when tried upon a large scale, will prove eminently successful. The men are working long hours, in order to complete the work as soon as possible.

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